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7  
8 UNITED STATES DISTRICT COURT  
9 NORTHERN DISTRICT OF CALIFORNIA  
10 OAKLAND DIVISION

11 JOHNSON & JOHNSTON  
ASSOCIATES, INC., a New Hampshire  
12 corporation,

13 Plaintiff/Counter-Claim Defendant,

14 vs.

15 R.E. SERVICE CO., INC., a California  
16 corporation,

17 Defendant/Counter-Claimant.  
\_\_\_\_\_ /

No. C-03-2549 SBA

***R.E. SERVICE CO., INC.'S OPENING  
CLAIM CONSTRUCTION BRIEF***

***PATENT INFRINGEMENT***

Complaint Filed: 5/29/03

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**I.****INTRODUCTION**

Defendant and Counter-Claimant R.E. SERVICE CO., INC. (hereafter "RES") respectfully submits this opening brief on claim construction of its patents pursuant to Patent L.R. 4-5(a).

**A. The Present Controversy**

The present case is an action for patent infringement by JOHNSON & JOHNSTON ASSOCIATES, INC. (hereafter "JJA") against RES. JJA owns U.S. Patent No. 5,674,596 (hereafter the "'596 patent"), and U.S. Patent No. 5,942,315 (the "'315" patent) (hereafter collectively "the JJA patents-in-suit"). The JJA patents-in-suit are continuations of the JJA U.S. Patent No. 5,153,050 (the "'050 patent"), which was the subject of two prior actions between these same parties. Generally, the JJA patents-in-suit relate to a laminate for the manufacture of a printed circuit board. JJA has alleged that RES has infringed one or more claims of the JJA patents-in-suit by making and selling its laminates for printed circuit boards. JJA also contends that RES's infringement is willful. RES denies infringement, and asserts numerous affirmative defenses, including invalidity and unenforceability.

RES filed a Counterclaim against JJA. RES owns U.S. Patent No. 6,129,998 (the "'998 patent"), U.S. Patent No. 6,129,990 (the "'990 patent"), U.S. Patent No. 6,130,000 (the "'000 patent"), and U.S. Patent No. 6,235,404 B1 (the "'404 patent") (hereafter collectively "the RES patents-in-suit"). Generally, the RES patents-in-suit relate to components for use in manufacturing printed circuit boards. RES has alleged that JJA has infringed one or more claims of the RES patents-in-suit through its activities with respect to components for use in manufacturing printed circuit boards. RES also contends that JJA's infringement is willful. JJA denies infringement, and asserts numerous affirmative defenses, including invalidity and unenforceability.

**B. Claim Construction Proceeding to Date**

On October 30, 2003, the parties exchanged their respective Disclosure of Asserted Claims and Preliminary Infringement Contentions pursuant to Patent L.R. 3-1 (Exhibits A and B).<sup>1</sup>

On January 5, 2004, the parties exchanged their respective Preliminary Invalidity Contentions pursuant to Patent L.R. 3-3 (Exhibits C and D).

On January 7, 2004, the parties exchanged their respective Proposed Terms and Claim Elements for Construction pursuant to Patent L.R. 4-2(a) (Exhibits E and F).

On February 10, 2004, the parties exchanged their respective Preliminary Claim Constructions and Extrinsic Evidence pursuant to Patent L.R. 4-2(b) (Exhibits G and H).

On March 2, 2004, the parties filed and served their Joint Claim Construction and Pre-Hearing Statement pursuant to Patent L.R. 4-3 (Exhibit I). The disputed claim terms with respect to the RES patents-in-suit and the parties' positions on those terms are summarized below:

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<sup>1</sup> The "Exhibit" cited in this Brief shall refer to exhibits attached to the accompanying declaration of Robert A. Nakamae.

<b>Patent Claim</b>	<b>Disputed Claim Term or Phrase</b>	<b>RES's Proposed Construction</b>	<b>JJA's Proposed Construction</b>
'998 patent	Metal substrate layer	A piece of metal that conforms to specifications for hardness, thermal expansion and surface roughness facilitating the handling of thin sheets of copper foil, that separates individual P.C. boards within a book of boards being pressed under heat and pressure, thereby minimizing image transfer and that has a CTE similar to that of the copper foil which maintains appropriate registration throughout all the P.C. boards	A piece of metal to which copper foil is attached.
'998 patent	A plurality of occurrences of adhesive material disposed between said substrate layer and said foil layer.	A large number of separate, non-continuous, areas of adhesive material placed between the substrate and foil layers of the laminate.	A large number of separate areas of adhesive material placed between the substrate and foil layers of the laminate.
'998 patent	Along the periphery of said foil layer.	Around the perimeter of the foil sheet outside the useable area of the foil sheet.	A band around the perimeter of the foil sheet.

Patent Claim	Disputed Claim Term or Phrase	RES's Proposed Construction	JJA's Proposed Construction
'998 patent	Such that gaps <sup>2</sup> are defined between said occurrences of adhesive material.	Breaks in continuity of the adhesive material.	Breaks in continuity of the adhesive material.
'990 patent, '000 patent, '404 patent	Carbon steel substrate	Steel composed of at least 97.15% Iron and containing less than 1.65% manganese, 0.6% silicon and 0.6% copper, generally understood by those skilled in the art as comprising the 1XXX groups in the AISI SAE System; used in the form of a sheet that facilitates the handling of thin sheets of copper foil, that separates individual P.C. boards within a book of boards being pressed under heat and pressure, thereby minimizing image transfer and that has a CTE similar to that of the copper foil which maintains appropriate registration throughout all the P.C. boards	A piece of steel having no specified minimum quantity for any alloying element (other than the commonly accepted amounts of manganese, silicon and copper) and containing only an incidental amount of any element other than carbon, silicon, manganese, copper, sulfur and phosphorus, to which the copper foil is attached.
'990 patent, '404 patent	Bonded	Materials that are attached together by one of several different processes which may be capable of being released from one another after lamination.	Materials that are attached together by one of several different processes.

<sup>2</sup> RES initially proposed a construction that expanded upon JJA's proposed construction. RES will stipulate to the JJA proposed construction for this particular claim term.

**C. RES's Patents-in-Suit Containing the Disputed Claim Terms**

**1. The '998 Patent**

The '998 patent contains three<sup>3</sup> disputed claim terms. A copy of the '998 patent is attached as Exhibit J.

The '998 patent discloses a sheet laminate for use in the manufacture of printed circuit boards. The sheet laminate is comprised of a metal sheet or substrate layer and at least one layer of thin copper foil. The copper foil layer is attached to the surface of the substrate by an adhesive material disposed between the substrate and the copper foil in a line of separate occurrences of adhesive, punctuated by gaps between such occurrences, along the perimeter of the foil layer.

**2. The '990 Patent**

The '990 patent contains two disputed claim terms. A copy of the '990 patent is attached as Exhibit K.

The '990 patent discloses a sheet laminate comprised of a substrate layer made of carbon steel of certain specification and a copper foil layer that is releasibly bonded thereto.

**3. The '000 Patent**

The '000 patent contains one disputed claim term. A copy of the '000 patent is attached as Exhibit L.

The '000 patent discloses a corrosion resistant separator sheet between in the manufacture of printed circuit boards that is made of carbon steel of certain specification relative to hardness, surface finish, coefficient of thermal expansion and thickness.

**4. The '404 Patent**

The '404 patent contains two disputed claim terms. A copy of the '404 patent is attached as Exhibit M.

The '404 patent discloses a sheet laminate comprised of a substrate layer made of carbon steel of certain specification and a copper foil layer releasibly bonded to the substrate layer.

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<sup>3</sup>See footnote 2 above.



1 II.

2 CLAIM CONSTRUCTION LAW

3 A. Claim Construction Law

4 The purpose of claim construction is to determine "the meaning and scope of the patent  
5 claims." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995, *aff'd*,  
6 517 U.S. 370 (1996). "[T]he court has the power and obligation to construe as a matter of law  
7 the meaning of language used in the patent claim." *Id.* at 979. The proper starting point for any  
8 claim construction exercise is the actual language of the claim itself. *Vitronics Corp. v.*  
9 *Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996); *Interactive Gift Express, Inc. v.*  
10 *CompuServe, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001) ("In construing claims, the analytical  
11 focus must begin and remain centered on the language of the claims themselves."); *Comark*  
12 *Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998) ("The  
13 appropriate starting point . . . is always with the language of the asserted claim itself."). Unless  
14 compelled otherwise, a court will give a claim term the full range of its ordinary meaning as  
15 understood by persons skilled in the relevant art. *Texas Digital Sys., Inc. v. Telegenix, Inc.*, 308  
16 F.3d 1193, 1202 (Fed. Cir. 2002).

17 Courts are encouraged to use dictionaries, encyclopedias, and treatises in determining the  
18 ordinary and customary meanings of claim terms. *Texas Digital*, 308 F.3d at 1202, *accord*,  
19 *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002) ("The ordinary  
20 meaning of a claim term may be determined by reviewing a variety of sources, including . . .  
21 dictionaries and treatises . . ." (internal citations omitted)); *CCS Fitness, Inc. v. Brunswick Corp.*,  
22 288 F.3d 1359, 1366 (Fed. Cir. 2002) ("[O]ur precedents show that dictionary definitions may  
23 establish a claim term's ordinary meaning."); *Optical Disc Corp. v. Del Mar Avionics*, 208 F.3d  
24 1324, 1334-1335 (Fed. Cir. 2000) ("For such ordinary meaning, we turn to the dictionary  
25 definition of the term.").

26 Dictionaries, encyclopedias and treatises, publicly available at the time  
27 the patent is issued, are objective resources that serve as reliable  
28 sources of information on the established meanings that would have  
been attributed to the terms of the claims by those of skill in the art.  
Such references are unbiased reflections of common understanding not  
influenced by expert testimony or events subsequent to the fixing of the

intrinsic record by the grant of the patent, not colored by the motives of the parties, and not inspired by litigation. Indeed, these materials may be the most meaningful sources of information to aid judges in better understanding both the technology and the terminology used by those skilled in the art to describe the technology.

*Texas Digital*, 308 F.3d at 1202-1203. As such, "[D]ictionaries are always available to the court to aid in the task of determining meanings that would have been attributed by those of skill in the relevant art to any disputed claim terms used by the inventor in the claims." *Id.* at 1202 (citing *Vitronics*, 90 F.3d at 1584 n.6). Therefore, "categorizing them as 'extrinsic evidence' or even a 'special form of extrinsic evidence' is misplaced and does not inform the analysis." *Id.* at 1203.

Since words often have multiple dictionary definitions, the intrinsic evidence (e.g. the claims, specifications, and prosecution history) must be consulted to identify which of the possible definitions are most consistent with the use of the word by the inventor, and to eliminate those that have no relation to the claimed invention. *Texas Digital*, 308 F.3d at 1203. Further,

[I]f more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all such consistent meanings . . . The objective and contemporaneous record provided by the intrinsic evidence is the most reliable guide to help the court determine which of the possible meanings of the terms in question was intended by the inventor to particularly point out and distinctly claim the invention.

*Id.* at 1203-1204 (internal citations omitted). In looking at the intrinsic evidence, it is well settled that "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of the disputed term." *Vitronics*, 90 F. 3d at 1582.

"Moreover, the intrinsic record also must be examined in every case to determine whether the presumption of ordinary and customary meaning is rebutted." *Texas Digital*, 308 F.3d at 1204. If the specification uses the disputed claim term in a manner inconsistent with the ordinary dictionary definition, then the inconsistent dictionary definition must be rejected. *Id.* The presumption in favor of a dictionary definition will only be overcome where (1) the patentee, as his/her own lexicographer, defines the claim term in the patent to have something other than its ordinary meaning; or (2) "the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction." *Id.* In examining the intrinsic evidence,

1 however, the Federal Circuit has repeatedly admonished that the "court cannot alter what the  
 2 patentee has chosen to claim as his invention, that limitations appearing in the specification will not  
 3 be read into claims, and that interpreting what is meant by a word in a claim is not to be confused  
 4 with adding an extraneous limitation appearing in the specification, which is improper." *Intervet*  
 5 *Am., Inc. v. Kee-Vet Lab., Inc.* 887 F.2d 1050, 1053 (Fed. Cir. 1989). Likewise, the  
 6 prosecution history too cannot "enlarge, diminish, or vary" the limitations in the claims. *Markman*,  
 7 52 F.3d at 980.

8 In short, the Federal Circuit is of the position that

9 [B]y examining relevant dictionaries, encyclopedias and treatises to  
 10 ascertain possible meanings that would have been attributable to  
 11 the words of the claims by those skilled in the art, and by further  
 12 utilizing the intrinsic record to select from those possible meanings  
 13 the one or ones most consistent with the use of the words by the  
 14 inventor, the full breadth of the limitations intended by the inventor  
 15 will be more accurately determined and the improper importation  
 16 of unintended limitations from the written description into the  
 17 claims will be more easily avoided.

14 *Texas Digital*, 308 F.3d at 1205.

15 Finally, if the ordinary meaning is clear from the intrinsic evidence, reliance on extrinsic  
 16 evidence (e.g. expert testimony and prior art) is improper. *Northern Telecom Ltd., v. Samsung*  
 17 *Elec. Co., Ltd.*, 215 F.3d 1281, 1288 (Fed. Cir. 2000); *Robotic Vision Sys., Inc. v. View*  
 18 *Eng'g., Inc.*, 189 F.3d 1370, 1375 (Fed. Cir. 1999).

## 19 **B. Claim Construction**

20 In terms of construing the claims, the first step is to look to the words of the claims  
 21 themselves to define the scope of the patented invention. *Bell Communications Research, Inc. v.*  
 22 *Vitalink Communications Corp.*, 55 F.3d 615, 620, (Fed. Cir. 1995). The court will usually  
 23 give words in a claim their ordinary and customary meaning; however, a patentee can be his/her  
 24 own lexicographer and use a term in a manner other than its ordinary meaning, as long as the  
 25 special definition of the term is clearly stated in the patent specification or file history. *Intellicall,*  
 26 *Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1388, (Fed. Cir. 1992).

27 The second step is to review the specification to see if the inventor used the term in a  
 28 manner inconsistent with its ordinary meaning. The specification serves as the "dictionary" when it

expressly defines terms used in the claims. *Markman*, 52 F.3d at 979. "Claims must be read in view of the specification, of which they are a part." *Id.*

Third, the court may also consider the patent's prosecution history (if in evidence). *Markman*, 52 F.3d at 980; *Graham v. John Deere*, 383 U.S. 1, 33 (1966).

### III.

#### CONSTRUCTION OF THE RES PATENT CLAIM TERMS

##### A. The '998 Patent:

##### 1. Metal Substrate Layer

RES has provided the following definition for "metal substrate layer":

A piece of metal that conforms to specifications for hardness, thermal expansion and surface roughness facilitating the handling of thin sheets of copper foil, that separates individual P.C. boards within a book of boards being pressed under heat and pressure, thereby minimizing image transfer and that has a CTE similar to that of the copper foil which maintains appropriate registration throughout all the P.C. boards.

While JJA's rather curt proposed construction ["A piece of metal to which copper foil is attached"] has superficial appeal, it falls short of capturing the importance and functionality of the substrate. The substrate is vital to the invention precisely because it does so much more than simply serve as an attachment for the copper foil. As explained in the specification:

"Steel alloy substrate 12 employed in the present invention has a low propensity to scratch, pit or dent because it is many times harder than other metals, such as aluminum. Therefore, a PCB laminated with steel alloy substrates will have **less likelihood of surface imperfections.**" ('998 Patent. Col. 5. Lns. 5-9).

"Another the advantage provided by the steel alloy used in sheet laminate apparatus 10 is the additional hardness steel offers, along with greater rigidity, which **significantly reduces image transfer** onto foil layer 14 and ultimately, onto the finished PCB." ('998 Patent. Col. 5. Lns. 5-9).

"The greater rigidity provided by steel alloy substrate 12 used in the present invention also provides better support for copper foil layer 14 and practically **eliminates the bellows-effect associated with aluminum substrates.** Because of low rigidity, an aluminum substrate flexes easily and, when flexed, the aluminum substrate momentarily separates from the copper foil layer thereby creating a suction that draws dust and debris into the resultant gaps. As a result of dust and debris entering the gaps, dent and epoxy spots appear on the finished PCB surface. A complete seal between steel alloy substrate 12 and foil

layer 14, essential for aluminum substrates, is therefore unnecessary for steel alloy substrates." ('998 Patent. Col. 5. Lns. 33-44).

"[A] 24-inch wide unrestrained sheet of aluminum heated from room temperature (70.degree. F.) to curing temperature will have its width increased by approximately 0.090 inches. A steel sheet of identical proportion will have a width increase of approximately 0.049 inches and copper will have a width increase of 0.066 inches. It can be clearly seen that not only are **the dimensional differences between copper and steel are less** than the dimensional difference between aluminum and copper, the steel alloy expands overall less than the copper which has been determined to be preferable. As a result, the PCB's produced using steel alloy substrates are **flatter and more uniform** as compared with those produced using aluminum substrates." ('998 Patent. Col. 6. Lns. 7-19). (*emphasis added*)

Describing the "metal substrate layer" simply as a sheet to which the copper foil is attached does not begin to address the many important functions and characteristics the substrate must perform and possess.

## 2. Plurality of Occurrences of Adhesive Material Disposed Between Said Substrate and Said Foil Layer

The parties agree upon the proposed construction of this term -- with the exception of the phrase "non-continuous." RES contends that the claim language supports inclusion of the phrase "non-continuous." A "plurality of occurrences" connotes more than one occurrence. Both parties agree with this. A "large number of separate areas" also mandates more than one occurrence. If the adhesive was in fact continuous, there would only be one occurrence. Therefore, the plain language of the claim requires a construction that includes the phrase "non-continuous." This is supported by the language in the claim that requires there to be "gaps" between the separate occurrences of adhesive ["such that gaps are defined between said occurrences of adhesive material"]. The term "gaps" is synonymous with the phrase "non-continuous."

Further, the specification discloses gaps in the adhesive which requires the adhesive to be non-continuous:

"Adhesive material 16 is arranged generally linearly in a plurality of occurrences such that gaps or openings 20 are defined between occurrences of adhesive material 16." ('998 Patent. Col. 6. Lns. 51-54).

"The occurrences of adhesive material 16 make up between approximately 40% to 60% of the perimeter length, thus leaving gaps

20 formed along 40% to 60% of the perimeter.” (‘998 Patent. Col. 6. Lns. 62-65).

Finally, the specification instructs *against* using a continuous line of adhesive:

“Each occurrence of adhesive material 16 can take the form of strips or dots, as long a continuous line of adhesive material is not employed.” (‘998 Patent. Col. 6. Lns. 60-62).

It is clear from the claim language and specifications that there are to be a number of separate occurrences of adhesive. Accordingly, proper construction must include the phrase "non-continuous."

### 3. Along the Periphery of Said Foil Layer

There are two material differences between the parties' proposed constructions. The first concerns use of the phrase "outside the useable area of the foil sheet." RES contends that this phrase is necessary because of the nature of the invention itself, as explained in the specification:

“Adhesive material 16 is placed around the perimeter of the sheets and within a margin 18 that is typically between approximately 0.25 inches and 1 inch wide, depending on end product and customer requirements.” (‘998 Patent. Col. 6. Lns. 47-51).

The area within the perimeter of adhesive defines the area that can be used to etch the circuitry of the PCB. The area required by a given customer's product will vary from product to product, and customer to customer. The only constant is that no adhesive can be placed within the useable area or else the board will be subject to rejection. See Declaration of Mark Frater, ¶7. The uncontaminated, useable area of the foil sheet is *defined*, then, by the adhesive perimeter on the foil sheet.

The second significant difference between the parties' construction of the subject term concerns use of the word "band" by JJA to describe the perimeter of adhesive. Just as a matter of ordinary meaning, the word "band" implies a continuous, unbroken element that "binds, ties together, restrains, etc." (Webster's New World Dictionary, 2nd College Edition.) An interrupted band is a *non-sequitur* for the reason that it would be incapable of binding, restraining, or tying together. Webster's also defines "band" as a "strip" or a "stripe." These words, in turn, are defined as "A long, narrow piece, as of land, ribbon, wood, etc." and "a long, narrow band, mark, or

1 streak, differing in color, texture, or material from the surrounding area," respectively. *Id.* Neither  
 2 strip nor stripe is commonly understood as having interruptions or gaps within it. More  
 3 importantly, the term "band" has figured prominently in the parties' past litigation history and is  
 4 certain to arise as a disputed term in connection with the construction of JJA's '315 patent which  
 5 expressly employs "band of flexible adhesive" and which JJA seeks to construe as either having or  
 6 not having "gaps." Against this backdrop, it would be not only confusing, but erroneous to inject  
 7 the concept of "band" into the construction of "periphery of said foil layer," Obviously, "periphery  
 8 of said foil layer" addresses the *location* of the adhesive, not the features or attributes of the  
 9 adhesive itself.

10 **4. Such that Gaps are Defined Between Said Occurrences of Adhesive**  
 11 **Material**

12 RES will stipulate to the construction proposed by JJA: "Breaks in continuity of the  
 13 adhesive material."

14 **B. The '990, The '000 and The '404 Patents**

15 **1. Carbon Steel Substrate**

16 RES has proposed the following definition of "carbon steel substrate":

17 Steel composed of at least 97.15% Iron and containing less than  
 18 1.65% manganese, 0.6% silicon and 0.6% copper, generally  
 19 understood by those skilled in the art as comprising the 1XXX groups  
 20 in the AISI SAE System; used in the form of a sheet that facilitates the  
 21 handling of thin sheets of copper foil, that separates individual P.C.  
 boards within a book of boards being pressed under heat and pressure,  
 thereby minimizing image transfer and that has a CTE similar to that of  
 the copper foil which maintains appropriate registration throughout all  
 the P.C. boards.

22 The parties' definitions of "carbon steel" are quite similar. The differences here lie in the  
 23 definition of "substrate." As we have seen in connection with the definition of "metal substrate," the  
 24 substrate is responsible for accomplishing much more than simply serving as an attachment for the  
 25 copper foil. It serves as a separator, minimizes image transfer and maintains registration  
 26 throughout all of the P.C. boards in the book.

27 The plain language of the claims demonstrates the importance of these functions to the RES  
 28 invention. Claim 1(a) of the '990 patent requires that the substrate have a " Knoop hardness



1 between approximately 150 and approximately 850." The importance of this high level of  
 2 hardness in avoiding image transfer is explained in the specification:

3 "Another advantage provided by the steel substrate used in sheet laminate  
 4 10 is the additional hardness steel offers, along with greater rigidity, which  
 5 significantly reduces image transfer onto foil layer 14." ('990 Patent. Col.  
 6 6-7. Lns. 66-2).

6 The importance of proper registration between the copper foil and the substrate (and  
 7 therefore throughout the entire book of P.C. boards) can be seen in Claim 1(a) of the '990 patent  
 8 which requires that the substrate have a "coefficient of thermal expansion less than approximately  
 9 9.8  $\mu$  inches per degree F." The specified coefficient of thermal expansion ("CTE") for the carbon  
 10 steel substrate guarantees there will be minimal thermal mismatch between the substrate and the  
 11 copper foil during heating so as to maintain proper registration, unlike the huge thermal mismatch  
 12 experienced when an aluminum substrate was used:

13 "In direct comparison, the CTE of aluminum is 84% greater than that of  
 14 steel. This means that a 24-inch wide unrestrained sheet of aluminum  
 15 heated from room temperature (70.degree. F.) to curing temperature will  
 16 have its width increased by approximately 0.090 inches. A steel sheet of  
 17 identical proportion will have a width increase of approximately 0.049  
 18 inches and copper will have a width increase of approximately 0.066  
 19 inches. It can be clearly seen that not only are the dimensional  
 20 differences between copper and steel less than the dimensional  
 21 difference between aluminum and copper, the steel expands overall less  
 22 than the copper which has been determined to be preferable. As a  
 23 result, the PCB's produced using steel substrates are flatter and more  
 24 uniform as compared with those produced using aluminum substrates."  
 25 ('990 Patent. Col. 7. Lns. 51-65).

26 "If the substrate material is steel according to the invention herein,  
 27 copper foil layer 14 will not be stretched during heating to the curing  
 28 temperature, and thus no uneven loading will occur on copper foil layer  
 29 14 and also blister causing strains in copper foil layer 14 is reduced."  
 30 ('990 Patent. Col. 8. Lns. 18-22).

23 Reducing image transfer and maintaining proper registration are critical features of the RES  
 24 invention, especially in view of today's ever more demanding industry standards. See Declaration  
 25 of Mark Frater, ¶5-7.

26 Finally, the substrate must act as a separator plate between individual P.C. boards. See  
 27 Declaration of Mark Frater, ¶4. One of the major advantages of the RES invention over prior  
 28



1 technology is the ability to remove a thick separator plate previously required when aluminum  
 2 substrates were used in order to minimize image transfer. The absence of these thick separator  
 3 plates has improved both yield and efficiency. See Declaration of Mark Frater, ¶4.

## 4 **2. Bonded**

5 The parties agree on this construction except for the phrase "which may be capable of  
 6 being released from one another after lamination." While it is true the claims of the '990 and the  
 7 '404 do not refer to a releasable bond, it is clear from the intrinsic evidence that the term bonded  
 8 must encompass this limitation:

9 "A sheet laminate for use in a press lay-up between printed circuit  
 10 board panels having a steel substrate layer and a copper foil layer  
 11 releasibly bonded to at least one surface of the substrate layer." ('990  
 Patent Abstract)

12 "It will be appreciated, however, that the adhesive should be of a type  
 13 that either releases the sheets at press temperatures or otherwise does  
 not interfere with the subsequent separation of the sheets." ('404  
 Patent. Col. 3. Lns. 52-55).

14 The copper foil becomes part of the final product, the substrate layer does not. For the  
 15 invention described in the RES patents to perform, as claimed, the substrate must eventually be  
 16 released from the copper layer. See Declaration of Mark Frater, ¶3. Therefore, proper  
 17 construction of "bonded" must account for a separation of the two materials. "Bonded" in this  
 18 context must be read as incorporating a "releasable" attribute.

## 19 **IV.**

### 20 **CONCLUSION**

21 Under Federal Circuit precedent, the proper interpretation of disputed claim terms must  
 22 focus on the language of the claims and their plain and ordinary meaning as understood by a person  
 23 skilled in the art. To determine the plain and ordinary meaning, it is proper (and recommended)  
 24 that certain reference materials such as dictionaries be consulted so that all possible connotations of  
 25 the disputed term can be elicited. Then, by using the patent specification as a guideline, where  
 26 dictionary definitions are seen to be inconsistent with the use of the term in the patent, such  
 27 definitions can be eliminated.

1 RES respectfully requests that the Court adopt its proposed construction of the disputed  
2 claim terms and/or phrases.

3 Dated: March 29, 2004

ROBINSON & WOOD, INC.

4  
5 By \_\_\_\_\_/s/\_\_\_\_\_  
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